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## **EVALUATION OF QUALITY DEER MANAGEMENT (QDM) IN DEER MANAGEMENT UNIT 122 (DICKINSON, IRON, AND MENOMINEE COUNTIES)**

Brian J. Frawley

### **ABSTRACT**

*A survey was completed to determine whether hunters and landowners supported existing mandatory Quality Deer Management (QDM) regulations in Deer Management Unit (DMU) 122. A key feature of these existing QDM regulations was that the definition of a buck was a deer with three or more points on one antler. The Michigan Department of Natural Resources (DNR) supports the voluntary implementation of QDM practices on private land in Michigan. However, mandatory regulations should be imposed in a DMU only when it can be shown that a clear majority ( $\geq 66\%$ ) of hunters and landowners support implementation. Questionnaires were sent to a random sample of landowners and hunters; 75% of the landowners and 83% of hunters returned their questionnaire. About 76% of landowners owning land in DMU 122 and 74% of people hunting deer in DMU 122 supported continuation of antler point restrictions. Support from both landowners and hunters was sufficient to recommend continuation of antler point restrictions in DMU 122.*

### **INTRODUCTION**

Since 2001, deer hunters in Deer Management Unit (DMU) 122 in portions of Dickinson, Iron, and Menominee counties have been allowed to take an antlered deer (buck) only if it had three or more antler points on one antler (Frawley 2001). This regulation was originally implemented as part of a deer management philosophy called Quality Deer Management (QDM). Quality



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Deer Management seeks to keep deer populations in balance with the habitat, more closely balance sex ratios, and increase the number of older-age bucks in the population.

The Michigan Department of Natural Resources (DNR) supports the voluntary implementation of QDM practices on private land. The DNR supports mandatory QDM regulations in a DMU if at least 66% of hunters and landowners in the affected DMU support these regulations. The DNR developed guidelines for considering and implementing QDM regulations with the assistance of private conservation groups and resource agencies (Quality Deer Management Working Group 1999). According to these guidelines, the DNR would determine whether hunters and landowners supported continuation of antler point restrictions five years after they were initiated.

The Wildlife Division has the authority and responsibility to protect and manage the wildlife resources of the State of Michigan. Opinion surveys are a management tool used by the Wildlife Division to accomplish its statutory responsibility. The main objectives of this opinion survey were to determine whether hunters and landowners supported continuation of the existing antler point restrictions (i.e., three points on a side) in DMU 122.

## **METHODS**

This survey was done in accordance with guidelines developed for evaluating proposed mandatory QDM regulations in Michigan (Quality Deer Management Working Group 1999). A questionnaire was sent to 1,268 randomly selected hunters and landowners from DMU 122. The survey was designed to produce estimates that would be accurate within a margin of error of plus or minus five percentage points. To achieve an estimate with a margin of error of 5%, about 500 people would need to be contacted for both the landowner and hunter groups. Because questionnaires were sent to only 314 hunters, the margins of error were expected to be about 6% for hunters.

A list of property parcels  $\geq 5$  acres were obtained from the Equalization offices in Dickinson, Iron, and Menominee counties. The property tax records were organized by property parcel identification numbers, rather than by landowner names. Therefore, people owning multiple parcels were in the property tax records multiple times. The parcels owned by the same landowner were combined to create a list of landowners. Property tax records included a legal description for each parcel. These legal descriptions were used to exclude parcels lying outside DMU 122 from the sample. As the landowner list was compiled, publicly owned land and parcels within cities and villages were also excluded. The final landowner list consisted of 1,341 landowners. From the final landowner list, 1,000 landowners were randomly selected to receive a questionnaire (i.e., simple random sampling design, Cochran 1977).

The estimate of hunter support was calculated using a simple random sampling design. A random sample of these hunters was obtained from lists of people that indicated they had hunted in DMU 122 at least once during 2001-2004. These lists represented randomly selected people included in annual deer harvest surveys that were conducted by the Wildlife Division (Frawley 2002, 2003, 2004, 2005). For these harvest surveys, hunters reported the DMU where they hunted. The final list consisted of 320 hunters. Mailing addresses were missing for six of these hunters; therefore, questionnaires were sent to 314 hunters.

People receiving the questionnaire were asked to report whether they supported continuation of the existing antler point restrictions in DMU 122. Response options to the question were “yes,” “no,” “undecided,” and “don’t care” (Appendix A). The percentage of support was measured by dividing the number of “yes” responses by the sum of those responses indicating “yes,” “no,” or “undecided.” People who indicated “don’t care” or who did not provide an answer were not used to estimate support for continuing antler point restrictions. A screening question was asked of everybody that received the questionnaire to determine whether they still hunted or owned land in DMU 122. The opinions of hunters that did not hunt within DMU 122 and landowners that did not own land within DMU 122 were not included when estimating support for continuing antler point restrictions.

Estimates of support for the continuation of antler point restrictions were calculated along with their 95% confidence limit (CL). This confidence limit could be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval was a measure of the precision associated with the estimate and implied that the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible response or nonresponse bias.

The random sample of people receiving the questionnaire included 1,000 landowners and 314 hunters, including 46 people that were included in both the landowner and hunter samples (Table 1). Questionnaires were initially mailed during December 2005. As many as two follow-up questionnaires were mailed to nonrespondents.

## **RESULTS AND DISCUSSION**

Questionnaires were originally mailed to 1,268 people, but questionnaires were undeliverable to 34 people (25 landowners and 9 hunters). Thus, the adjusted sample size was 975 landowners and 305 hunters. Questionnaires were returned by 940 people, yielding an overall 76% response rate. Questionnaires were returned by 731 landowners (75%) and 252 hunters (83%) (Table 1). Response rates of both groups exceeded the minimum response rate of 50% that was required in order to accept the results of the survey (Quality Deer Management Working Group 1999).

About 76% of the landowners owning land in DMU 122 supported the existing antler point restrictions (Table 2). In contrast, 21% of landowners did not support antler point restrictions and 3% did not have an opinion about the rule. Among hunters that hunted in DMU 122, about 74% supported antler point restrictions (Table 3). About 26% of the hunters did not support antler point restrictions and less than 1% did not have an opinion about the rule. The support of both landowners and hunters was sufficient to recommend continuation of antler point restrictions for DMU 122 by the Wildlife Division to the Natural Resources Commission.

## **ACKNOWLEDGEMENTS**

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## **LITERATURE CITED**

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Table 1. Number of people within each group and number selected for the random sample of people receiving the opinion survey regarding mandatory QDM regulations in DMU 122, Michigan.

Group	Total number of people in group	Number of people included in sample <sup>a</sup>	Number of questionnaires that were undeliverable	Number of questionnaires returned	Response rate (%)
Landowners <sup>b</sup>	1,341	1,000	25	731	75%
Hunters <sup>c</sup>	1,629	314	9	252	83%

<sup>a</sup>Forty-six people were included in both the landowner and hunter samples; thus, the overall sample size consisted of 1,268 people.

<sup>b</sup>Landowners owned at least one 5-acre parcel; however, each landowner was counted once regardless of number of parcels owned.

<sup>c</sup>Estimated number of people that hunted deer in DMU 122 in 2004 (Frawley 2005).

Table 2. Proportion of landowners supporting the proposed mandatory QDM regulations in DMU 122, Michigan.

Response	Percentage of landowners <sup>a</sup>	95% CL <sup>b</sup>	Responses (%)
Yes (Supported mandatory QDM regulations)	75.9%	2.3%	<p>Yes 76.1%</p> <p>No 21.0%</p> <p>No Opinion 2.9%</p>
No (Did not support mandatory QDM regulations)	21.1%	2.2%	
No opinion	3.0%	0.9%	

<sup>a</sup>Percentage of landowners owning at least one 5-acre parcel of land in DMU 122; landowners that selected “don’t care” ( $4.5 \pm 1.1\%$ ) or failed to provide an answer ( $0.3 \pm 0.3\%$ ) about their support for QDM regulations were not used to measure support for mandatory QDM regulations.

<sup>b</sup>95% confidence limits.

Table 3. Proportion of hunters supporting the proposed mandatory QDM regulations in DMU 122, Michigan.

Response	Percentage of hunters <sup>a</sup>	95% CL <sup>b</sup>	Responses (%)
Yes (Supported mandatory QDM regulations)	73.6%	5.9%	<p>A pie chart illustrating the distribution of responses. The largest slice, representing 'Yes' at 73.9%, is dark gray. The next largest slice, representing 'No' at 25.6%, is light gray. The smallest slice, representing 'No Opinion' at 0.6%, is white. Labels with percentages are placed next to each slice.</p>
No (Did not support mandatory QDM regulations)	25.8%	5.9%	
No opinion	0.5%	1.0%	

<sup>a</sup>Percentage of hunters that hunted deer in DMU 122; hunters that selected “don’t care” ( $1.1 \pm 1.4\%$ ) or failed to provide an answer ( $0.5 \pm 1.0\%$ ) about their support for QDM regulations were not used to measure support for mandatory QDM regulations.

<sup>b</sup>95% confidence limits.

## Appendix A

Deer Management Survey Questionnaire for  
Deer Management Unit 122.





MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE BUREAU  
PO BOX 30030 LANSING MI 48909-7530

## DEER MANAGEMENT SURVEY

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



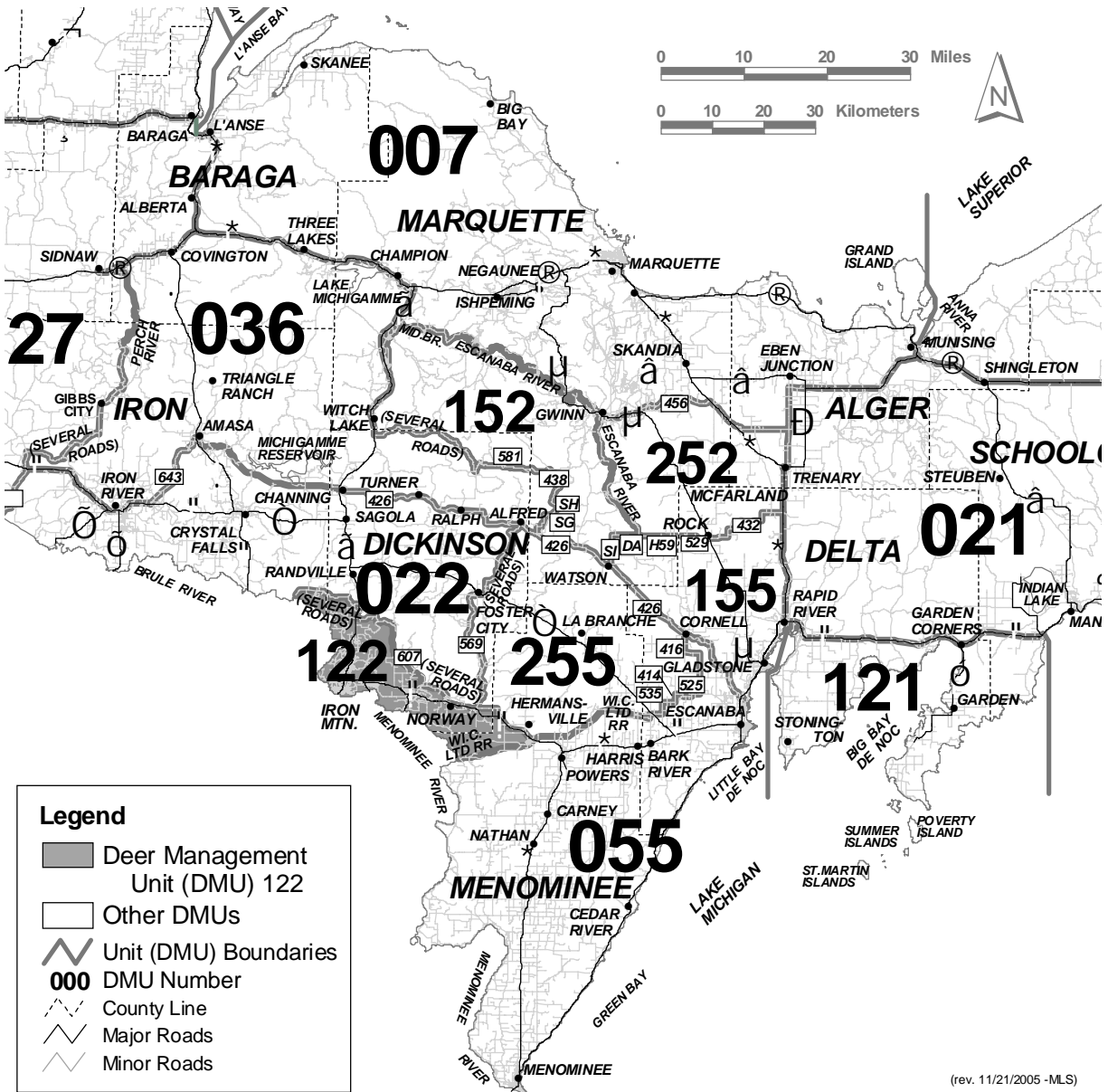
*Starting in 2001, deer hunters in Deer Management Unit (DMU) 122 in portions of Dickinson, Iron, and Menominee counties were only permitted to take an antlered deer if it had three or more antler points on at least one antler. This rule has now been in effect for five hunting seasons, but before we make any recommendation about the future of this rule, we want to determine whether hunters and landowners support these antler-point restrictions.*

1. Do you hunt in the management unit affected by the existing antler point restrictions (see map of DMU 122 on reverse side)?  
1 ☐ Yes    2 ☐ No
  
2. Do you own land in the management unit affected by the existing antler point restrictions (see map of DMU 122 on reverse side)?  
1 ☐ Yes    2 ☐ No
  
3. Do you support the continuation of the antler point restrictions in DMU 122 (portions of Dickinson, Iron, and Menominee counties)? **For purposes of measuring support, checking the "no opinion" box will count as a "no" answer and indicates you have not formed an opinion about the proposal.** Checking the "don't care" box will result in your opinion not being counted as supporting or opposing the proposal. This merely indicates that you are aware of the proposal and don't care about this deer hunting regulation for this area.  

1 ☐ Yes                      2 ☐ No                      3 ☐ No Opinion                      4 ☐ Don't Care

*Please return questionnaire in the enclosed postage-paid envelope.  
Thank you for your help.*

**Deer Management Unit 122 in portions of Dickinson,  
Iron, and Menominee counties**  
QDM regulations are currently in effect in DMU 122 (shaded area).



**Deer Management Unit 122** means that area of Menominee, Dickinson, and Iron counties bounded by a line beginning at the junction of highway US-2 and the Soo Line railroad in section 2, T38N R27W, then southwesterly to the Menominee river in section 20, T38N R28W, upstream along the Menominee river to the confluence of the Menominee and Brule rivers in section 16, T41N R31W, northwesterly on Michigamme Falls road in Iron county to Peavy Falls road in Dickinson county, easterly on Peavy Falls road to county road 607, southeasterly on county road 607 to Johnson road, westerly on Johnson road to highway M-95, southerly on highway M-95 to Merriman truck trail in section 27, T41N R30W, easterly on Merriman truck trail to Carney Lake road, southeasterly on Carney Lake road to the Wisconsin Electric highline in section 32, T41N R29W, southerly on the Wisconsin Electric highline to Pine creek in section 12, T40N R30W, southeasterly along Pine creek to county road 573 in section 3, T39N R29W, southeasterly on county road 573 to highway US-2 in section 18, T39N R28W, easterly on highway US-2 to Beaver Pete's road which runs on the north edge of sections 23 and 24, T39N R28W, easterly on Beaver Pete's road to the north-south road in section 19, T39N R27W, southerly on that road to highway US-2, easterly on highway US-2 to the point of beginning.